

THE CRYSTALLIZATION OF POLYETHYLENE TEREPHTHALATE

between the solubility parameters of a liquid and a not too polar amorphous polymer can be related to the heat change in their mixing and the interaction of polymer and liquid will therefore depend, in part, on the solubility parameter of the latter.

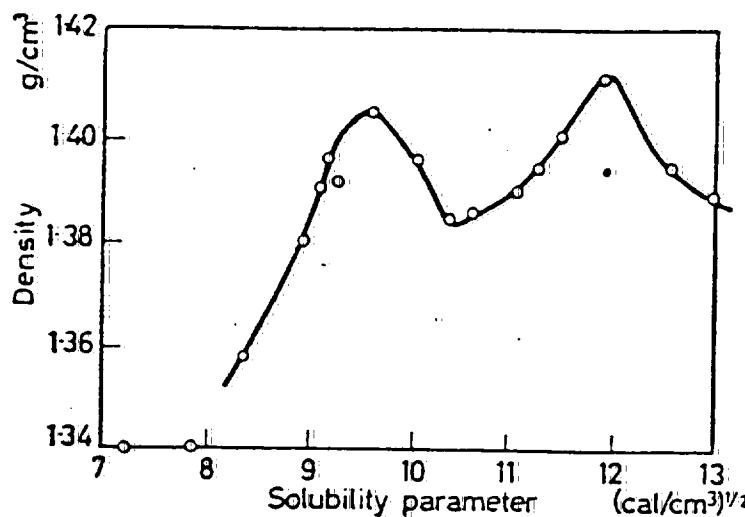


Figure 2 — Equilibrium density as a function of solubility parameter of liquid

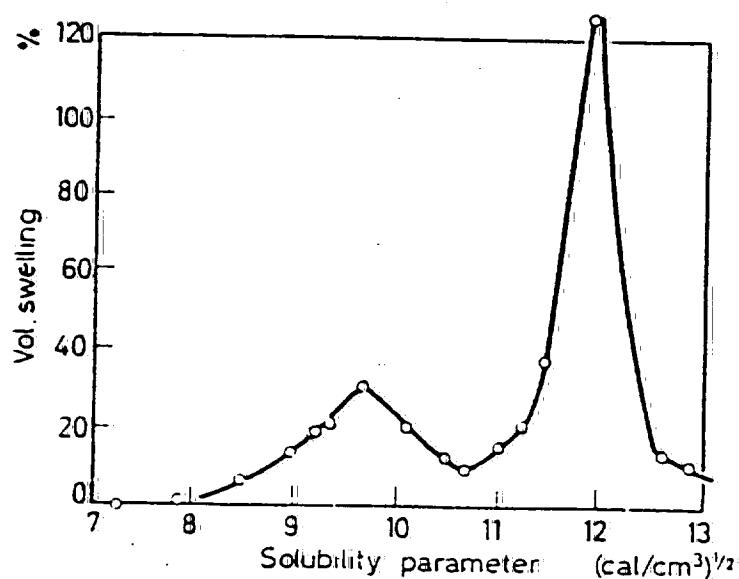


Figure 3—Equilibrium swelling as a function of solubility parameter of liquid

Figure 2 shows two maxima at δ values of approximately 9.7 and 12.0 and similar maxima are seen in Figure 3. The first maximum is associated with liquids such as ketones and esters which may be regarded as basic in the Lewis sense. Benzene and toluene, which are associated with this region of the plots, can also be regarded as basic¹¹. The second maximum is associated with liquids of acidic type such as *m*-cresol, acetic acid and nitromethane. The existence of two maxima may be a consequence of the presence of basic carbonyl groups in the polymer and acidic hydrogen atoms in CH_2 groups adjacent to oxygen atoms. Gilpin et al.¹² have suggested that